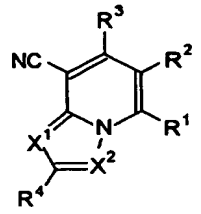
Claims

1. A compound represented by the following formula (I), a salt thereof, or a solvate thereof

[Formula 62]



(I)

[in the formula,

R^1 means a basic group which may have a substituent,

R^2 means

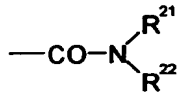
hydrogen atom,

halogen atom,

carboxy group,

a group represented by the following formula

[Formula 63]



(in the formula, R^{21} and R^{22} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms),

an alkyl group having from 1 to 6 carbon atoms,

an alkenyl group having from 2 to 6 carbon atoms,

an alkynyl group having from 2 to 6 carbon atoms,

an acyl group having from 2 to 7 carbon atoms,

an alkoxycarbonyl group having from 2 to 7 carbon atoms,

a cycloalkyl group having from 3 to 6 carbon atoms,

a cycloalkenyl group having 5 or 6 carbon atoms,

a cycloalkylalkyl group having from 4 to 12 carbon atoms,

an aryl group having from 6 to 10 carbon atoms,

an aralkyl group having from 7 to 12 carbon atoms,

a monocyclic, bicyclic or spiro cyclic heterocyclic group having from 2 to 10 carbon atoms (contains from 1 to 4 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom),

a heteroaryl group having from 3 to 10 carbon atoms, or

a heteroarylalkyl group having from 3 to 12 carbon atoms,

wherein when R^2 is an alkyl group, an alkenyl group, an alkynyl group, an acyl group or an alkoxycarbonyl group, these may have 1 or more groups of 1 or more species selected from [substituent group 2-1] as the substituent;

[substituent group 2-1]:

halogen atom,

amino group,

imino group,

nitro group,

hydroxy group,

mercapto group,

carboxy group,

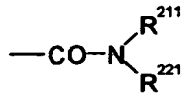
cyano group,

sulfo group,

a dialkyl phosphoryl group,

a group represented by the following formula

[Formula 64]



(in the formula, R^{211} and R^{221} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms),

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms,

an acyl group having from 2 to 7 carbon atoms,

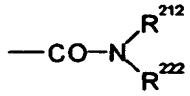
an alkoxycarbonyl group having from 2 to 7 carbon atoms,

a cycloalkyl group having from 3 to 6 carbon atoms,
an aryl group having from 6 to 10 carbon atoms, and
an arylthio group having from 6 to 10 carbon atoms
wherein amino group of the [substituent group 2-1] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, a mercaptoalkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, an aromatic heterocyclic group, an alkylsulfonyl group having from 1 to 6 carbon atoms and an arylsulfonyl group having from 6 to 10 carbon atoms, in addition, when said amino group has 2 substituents, they may be bonded together to form a cyclic structure;
hydroxy group of the [substituent group 2-1] or mercapto group of the [substituent group 2-1] may have a substituent selected from the group consisting of an alkyl group having from 1 to 6 carbon atoms, an aminoalkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, a mercaptoalkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms and an aromatic heterocyclic group;
when R^2 is a cycloalkyl group, these may have 1 or more groups of 1 or more species selected from [substituent group 2-2] as the substituent;
[substituent group 2-2]:
halogen atom,
amino group,
imino group,
nitro group,
hydroxy group,
mercapto group,
carboxy group,
cyano group,

sulfo group,

a group represented by the following formula

[Formula 65]



(in the formula, R^{212} and R^{222} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms),

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms,

an acyl group having from 2 to 7 carbon atoms, and

an alkoxycarbonyl group having from 2 to 7 carbon atoms;

amino group of the [substituent group 2-2] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, a mercaptoalkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, an aromatic heterocyclic group, an alkylsulfonyl group having from 1 to 6 carbon atoms and an arylsulfonyl group having from 6 to 10 carbon atoms, in addition, when said amino group has 2 substituents, they may be bonded together to form a cyclic structure;

when R^2 is an aryl group, an aralkyl group, a heteroaryl group or a heteroarylalkyl group, these may have 1 or more groups of 1 or more species selected from [substituent group 2-3] as the substituent;

[substituent group 2-3]:

halogen atom,

amino group,

imino group,

nitro group,

hydroxy group,

mercapto group,

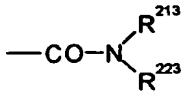
carboxy group,

cyano group,

sulfo group,

a group represented by the following formula

[Formula 66]



(in the formula, R^{213} and R^{223} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms), an alkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, an aralkyloxy group having from 7 to 12 carbon atoms, an aralkyloxycarbonyl group having from 8 to 15 carbon atoms, an aryl group and a monocyclic, bicyclic or spiro cyclic heterocyclic group having from 2 to 10 carbon atoms (contains from 1 to 4 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom);

amino group of the [substituent group 2-3] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, a mercaptoalkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, an aromatic heterocyclic group, an alkylsulfonyl group having from 1 to 6 carbon atoms and an arylsulfonyl group having from 6 to 10 carbon atoms, in addition, when said amino group has 2 substituents, they may be bonded together to form a cyclic structure;

when R^2 is a heterocyclic group, it may have 1 or 2 groups selected from the next [substituent group 2-4] as the substituent;

[substituent group 2-4]:

halogen atom,

amino group,

hydroxy group,

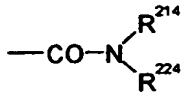
mercapto group,

carboxy group,

sulfo group,

a group represented by the following formula

[Formula 67]



(in the formula, R^{214} and R^{224} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms),

an alkyl group having from 1 to 6 carbon atoms,

an alkenyl group having from 2 to 6 carbon atoms,

an alkynyl group having from 2 to 6 carbon atoms,

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms,

a halogenoalkyl group having from 1 to 6 carbon atoms,

an acyl group having from 2 to 7 carbon atoms,

an alkoxycarbonyl group having from 2 to 7 carbon atoms, and

an aryl group having from 6 to 10 carbon atoms;

wherein amino group of the [substituent group 2-4] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, a mercaptoalkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, a monocyclic, bicyclic or spiro cyclic heterocyclic group having from 2 to 10 carbon atoms (contains from 1 to 4 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom), an aromatic heterocyclic group, an alkylsulfonyl group having from 1 to 6 carbon atoms and an arylsulfonyl group having from 6 to 10 carbon atoms, in addition, when said amino group has 2 substituents, they may be bonded together to form a cyclic structure;

in addition, R^1 and R^2 may together form a cyclic structure including the carbon atoms to which these are bonded, wherein this ring contains 1 or 2 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom, and the structural moiety to be formed herein may be saturated or unsaturated;

R^3 means

hydrogen atom,

halogen atom,

amino group,

hydroxy group,

mercapto group,

nitro group,

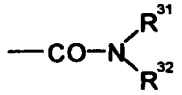
cyano group,

formyl group,

carboxy group,

a group represented by the following formula

[Formula 68]



(in the formula, R^{31} and R^{32} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms),

an alkyl group having from 1 to 6 carbon atoms,

an alkenyl group having from 2 to 6 carbon atoms,

an alkynyl group having from 2 to 6 carbon atoms,

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms

an acyl group having from 2 to 5 carbon atoms,

an alkoxycarbonyl group having from 2 to 5 carbon atoms,

a cycloalkyl group having from 3 to 7 carbon atoms,

a cycloalkenyl group having from 4 to 7 carbon atoms,

an aryl group having from 6 to 10 carbon atoms,

an aralkyl group having from 7 to 12 carbon atoms,

a heteroaryl group having from 3 to 10 carbon atoms;

wherein said amino group, said hydroxy group or said mercapto group may be protected by a protecting group;

when R^3 is an alkyl group, an alkenyl group, an alkynyl group, an alkoxy group, an alkylthio group, an acyl group, an alkoxycarbonyl group, a cycloalkyl group, a cycloalkenyl group, an aryl group, an aralkyl group or a heteroaryl group, these may have 1 or more groups of 1 or more species selected from [substituent group 3-1] as the substituent;

[substituent group 3-1]:

amino group,

hydroxy group,

mercapto group,

halogen atom,

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms,

an acyl group having from 2 to 5 carbon atoms, and

an alkoxycarbonyl group having from 2 to 5 carbon atoms;

amino group of the [substituent group 3-1] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aromatic heterocyclic group, an acyl group having from 2 to 5 carbon atoms and an alkoxycarbonyl group having from 2 to 5 carbon atoms, wherein when said amino group has 2 substituents, they may be bonded together to form a cyclic structure;

in addition, R^2 and R^3 may together form a polymethylene chain structure and form a 5-membered or 6-membered cyclic structure by including the carbon atoms to which R^2 and R^3 are to be bonded, this polymethylene chain may contain 1 or 2 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom, and the polymethylene chain formed herein may have 1 or more groups of 1 or more species selected from [substituent group 3-2] as the substituent;

[substituent group 3-2]:

amino group,

hydroxy group,

mercapto group,

halogen atom,

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms,

an acyl group having from 2 to 5 carbon atoms, and

an alkoxycarbonyl group having from 2 to 5 carbon atoms;

amino group of the [substituent group 3-2] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 1 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aromatic heterocyclic group, an acyl group having from 2 to 5 carbon atoms and an alkoxycarbonyl group having from 2 to 5 carbon atoms, wherein when said amino group has 2 substituents, they may be bonded together to form a cyclic structure;

in addition, R^2 and R^3 may together form a polymethylene chain structure and form a 5-membered or 6-membered cyclic structure by including the carbon atoms to which R^2 and R^3 are to be bonded, and this polymethylene chain may contain 1 or 2 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom,

wherein the polymethylene chain formed herein may have 1 or more groups of 1 or more species selected from [substituent group 3-2] as the substituent;

[substituent group 3-2]: amino group, hydroxy group, mercapto group, halogen atom, an alkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an acyl group having from 2 to 5 carbon atoms, and an alkoxycarbonyl group having from 2 to 5 carbon atoms;

amino group of the [substituent group 3-2] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 1 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aromatic heterocyclic group, an acyl group having from 2 to 5 carbon atoms and an alkoxycarbonyl group having from 2 to 5 carbon atoms, wherein when said amino group has 2 substituents, they may be bonded together to form a cyclic structure; and

R^4 means

hydrogen atom,

halogen atom,

amino group,

hydroxy group,

mercapto group,

nitro group,

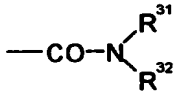
cyano group,

formyl group,

carboxy group,

a group represented by the following formula

[Formula 69]



(in the formula, R^{31} and R^{32} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms),

an alkyl group having from 1 to 4 carbon atoms,

an cyclic alkyl group having from 3 to 8 carbon atoms,

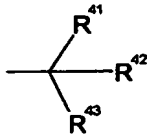
an aryl group having from 6 to 10 carbon atoms,

a heteroaryl group having from 5 to 9 carbon atoms,

an alkynyl group having from 2 to 6 carbon atoms, or

a group represented by

[Formula 70]



(in the formula, R^{41} and R^{42} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an alkoxy group having from 1 to 6 carbon atoms, or both may together form an exomethylene structure, and this exomethylene structure may further have an

alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms or a halogenoalkyl group having from 1 to 6 carbon atoms, as a substituent, and

R^{43} means hydrogen atom, a halogen atom, hydroxy group, mercapto group, nitrile group, nitro group, carboxy group, an alkoxycarbonyl group having from 2 to 7 carbon atoms, an alkylaminocarbonyl group having from 2 to 7 carbon atoms, an arylaminocarbonyl group having from 7 to 11 carbon atoms, a cycloalkylaminocarbonyl group having from 4 to 7 carbon atoms, an aralkylaminocarbonyl group having from 8 to 12 carbon atoms, an alkyl group having from 1 to 6 carbon atoms, a halogenoalkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, an aminoalkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 8 carbon atoms, a cycloalkyloxy group having from 3 to 8 carbon atoms, an aralkyl group having from 7 to 11 carbon atoms, or an aralkyloxy group having from 7 to 11 carbon atoms);

when R^4 is an alkyl group, a cyclic alkyl group, an aryl group or a heteroaryl group, and when R^{43} is an alkyl group, these may have 1 or more groups of 1 or more species selected from [substituent group 4] as the substituent;

[substituent group 4]:

halogen atom,

amino group,

nitro group,

hydroxy group,

mercapto group,

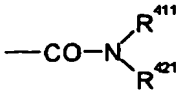
carboxy group,

cyano group,

sulfo group,

a group represented by the following formula

[Formula 71]



(in the formula, R^{411} and R^{421} each independently mean hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms),

an alkoxy group having from 1 to 6 carbon atoms,
an alkylthio group having from 1 to 6 carbon atoms,
an acyl group having from 2 to 7 carbon atoms,
an alkoxycarbonyl group having from 2 to 7 carbon atoms,
an aralkyloxy group having from 7 to 12 carbon atoms,
an aralkyloxycarbonyl group having from 8 to 15 carbon atoms,
an aryl group having from 6 to 10 carbon atoms, and
a monocyclic, bicyclic or spiro cyclic heterocyclic group having from 2 to 10 carbon atoms (contains from 1 to 4 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom);
amino group of the [substituent group 4] may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, a mercaptoalkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms, an aromatic heterocyclic group, an alkylsulfonyl group having from 1 to 6 carbon atoms and an arylsulfonyl group having from 6 to 10 carbon atoms, wherein when said amino group has 2 substituents, they may be bonded together to form a cyclic structure;
hydroxy group or mercapto group of the [substituent group 4] may have a substituent selected from the group consisting of an alkyl group having from 1 to 6 carbon atoms, an aminoalkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 1 to 6 carbon atoms, a mercaptoalkyl group having from 1 to 6 carbon atoms, an acyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms and an aromatic heterocyclic group, wherein when R^4 is an alkynyl group, it may have an alkyl group having from 1 to 6 carbon atoms, an alkoxyalkyl group having from 1 to 6 carbon atoms, a halogenoalkyl group having from 1 to 6 carbon atoms or carboxy group as a substituent;
X^1 and X^2 each independently mean
nitrogen atom or

carbon atom which may be substituted with

a halogen atom,

an alkoxy group having from 1 to 6 carbon atoms,

an alkyl group having from 1 to 6 carbon atoms which may have a substituent,

an ester group, wherein either one of X^1 and X^2 is nitrogen atom;

wherein the substituent of alkyl group is 1 or 1 or more groups selected from the following group of substituents;

halogen atom,

amino group,

nitro group,

hydroxy group,

mercapto group,

carboxy group,

cyano group,

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms,

an acyl group having from 2 to 7 carbon atoms,

an alkoxycarbonyl group having from 2 to 7 carbon atoms,

a cycloalkyl group having from 3 to 6 carbon atoms, and

an aryl group having from 6 to 10 carbon atoms;

when the substituents on carbon atoms are esters, these may be

an alkyl ester having from 1 to 6 carbon atoms,

an aryl ester having from 6 to 10 carbon atoms,

or an aralkyl ester consisting of an alkyl group having from 1 to 6 carbon atoms and an aryl group having from 6 to 10 carbon atoms;

in addition, the aryl moiety of these aryl esters and aralkyl groups may be substituted with 1 or 1 or more groups selected from the following group of substituents;

halogen atom,

amino group,

nitro group,

hydroxy group,

mercapto group,

carboxy group,

cyano group,

an alkyl group having from 1 to 6 carbon atoms,

an alkoxy group having from 1 to 6 carbon atoms,

an alkylthio group having from 1 to 6 carbon atoms,

an acyl group having from 2 to 7 carbon atoms,

an alkoxycarbonyl group having from 2 to 7 carbon atoms,

a cycloalkyl group having from 3 to 6 carbon atoms, and

an aryl group having from 6 to 10 carbon atoms].

2. The compound, a salt thereof, or a solvate thereof described in claim 1, wherein the basic group of R^1 is

(1) an amino substituted alkyl group having from 1 to 6 carbon atoms, which may have a substituent,

(2) an amino substituted cyclic alkyl group having from 3 to 6 carbon atoms, which may have a substituent,

(3) an aminocycloalkenyl group having from 3 to 6 carbon atoms, which may have a substituent,

(4) an amino substituted aralkyl group wherein the binding region with the bicyclic nucleus is an aromatic ring, which may have a substituent,

(5) an aminoalkyl substituted amino group having from 1 to 6 carbon atoms, which may have a substituent,

(6) an amino substituted cyclic alkylamino group having from 3 to 6 carbon atoms, which may have a substituent,

(7) an aminocycloalkenylamino group having from 3 to 6 carbon atoms, which may have a substituent,

(8) an amino substituted aralkylamino group wherein the binding region with the bicyclic nucleus is an aromatic ring, which may have a substituent, or

(9) a nitrogen-containing heterocyclic substituent, which may have a substituent;

wherein the amino group as the basic nature expressing group in the substituents of (1) to (8) may have 1 or 2 (may be the same or different when 2) of the substituents selected from the following substituent group [1-1];

substituent group [1-1]:

an alkyl group having from 1 to 6 carbon atoms, an alkenyl group having from 2 to 6 carbon atoms, an alkynyl group having from 2 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, a cycloalkyl group having from 3 to 10 carbon atoms, a cycloalkenyl group having from 4 to 10 carbon atoms, and a group derived from an amino acid, a dipeptide or a polypeptide consisting of 3 to 5 amino acids;

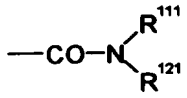
also, when the substituent selected from the substituent group [1-1] is an alkyl group, an alkenyl group, an alkynyl group, an alkoxycarbonyl group, a cycloalkyl group or a cycloalkenyl group, these may have 1 or more of 1 or more groups selected from [substituent group 1-1-1];

[substituent group 1-1-1]: hydroxy group, mercapto group, a halogen atom, an alkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms and a cycloalkyl group having from 3 to 10 carbon atoms;

in addition, the nitrogen-containing heterocyclic substituent of (9) preferably uses a carbon atom as the binding position, is saturated or partially saturated, and is a monocyclic, bicyclic or spiro cyclic heterocyclic group having from 2 to 10 carbon atoms (contains from 1 to 4 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom), and the substituent on this heterocyclic group may be selected from [substituent group 1-2];

[substituent group 1-2]: a halogen atom, amino group, hydroxy group, oxo group, a group represented by the following formula

[Formula 73]



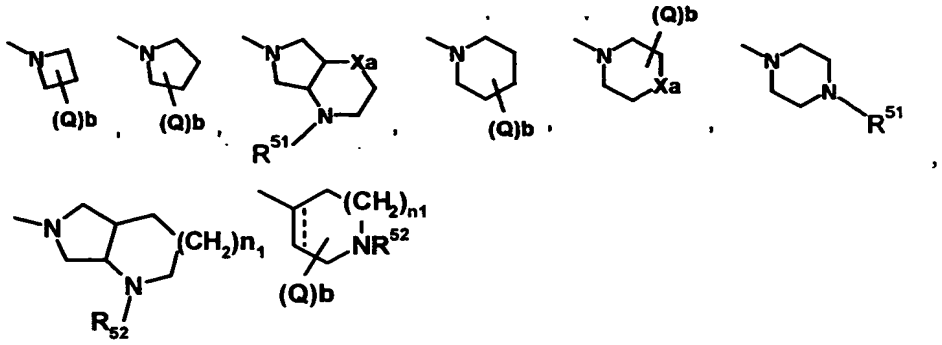
(in the formula, R^{111} and R^{121} each independently represents hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or an aryl group having from 6 to 10 carbon atoms), an alkyl group having from 1 to 6 carbon atoms, an aminoalkyl group having from 1 to 8 carbon atoms, an aminocycloalkyl group having from 3 to 8 carbon atoms, an alkoxy group having from 1 to 6

carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, a halogenoalkyl group having from 1 to 6 carbon atoms and an alkylamino group having from 1 to 6 carbon atoms;
wherein the alkyl moiety of the alkyl group, alkylamino group, cycloalkylamino group, alkoxy group, alkylthio group, halogenoalkyl group or aminoalkyl group of the [substituent group 1-2] may have 1 or more groups of 1 or more species selected from [substituent group 1-2-1];
[substituent group 1-2-1]: a halogen atom, hydroxy group, an alkyl group having from 1 to 6 carbon atoms, an alkoxy group having from 1 to 6 carbon atoms, an alkoxycarbonyl group having from 2 to 7 carbon atoms, an alkylcarbonylamino group having from 2 to 7 carbon atoms and an aryl group having from 6 to 10 carbon atoms;
wherein the amino group moiety of the amino group, aminoalkyl group, aminocycloalkyl group and alkylamino group of the [substituent group 1-2] may be protected with a protecting group, and also may have 1 or 2 of alkyl groups having from 1 to 6 carbon atoms (may have 1 or more groups of 1 or more species selected from the group of groups consisting of hydroxy group, a halogen atom, and an alkoxy group and alkylthio group having from 1 to 6 carbon atoms) as the substituent, and also, an amino acid, a dipeptide or a polypeptide consisting of 3 to 5 amino acids may be bonded thereto.

3. The compound, a salt thereof, or a solvate thereof described in claim 2, wherein R^1 is a nitrogen-containing heterocyclic group which may have a substituent.

4. The compound, a salt thereof, or a solvate thereof described in claim 3, wherein R^1 is a nitrogen-containing heterocyclic group which may have a substituent, and said nitrogen-containing heterocyclic group is a saturate or partially saturated nitrogen-containing heterocyclic group.

5. The compound, a salt thereof or a solvate thereof described in claim 4, wherein R^1 is a group represented by the following formula;
[Formula 74]



[in the formula, Xa means oxygen atom, sulfur atom, a substituent or NR^{52},

R^{51} and R^{52} each independently means hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a halogenoalkyl group having from 1 to 6 carbon atoms or a cycloalkyl group having from 3 to 6 carbon atoms,

the substituent Q means a substituent represented by the following formula,

[Formula 75]

$$-(CR^{71}CR^{72})_{n2}-N(R^{61}R^{62})$$

b means an integer of 0, 1 or 2,

n1 means an integer of 0 or 1,

n2 means an integer of 0, 1 or 2,

R^{61} and R^{62} each independently means hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or a halogenoalkyl group having from 1 to 6 carbon atoms, or a group derived from an amino acid, a dipeptide or a polypeptide consisting of 3 to 5 amino acids,

R^{71} and R^{72} each independently means hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a halogenoalkyl group having from 1 to 6 carbon atoms, a hydroxyalkyl group having from 3 to 6 carbon atoms, an aminoalkyl group having from 1 to 6 carbon atoms, an alkoxyalkyl group having from 2 to 12 carbon atoms, a cycloalkyl group having from 3 to 6 carbon atoms, a phenyl group which may have a substituent or a heteroaryl group having from 3 to 10 carbon atoms which may have a substituent,

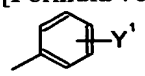
and the dotted line means that said binding region may form a double bond].

6. The compound, a salt thereof, or a solvate thereof described in any one of claims 1 to 5, wherein R^2 is an aryl group having from 6 to 10 carbon atoms, which may have a substituent, or a monocyclic, bicyclic or spiro cyclic heterocyclic group having from 2 to 10 carbon atoms

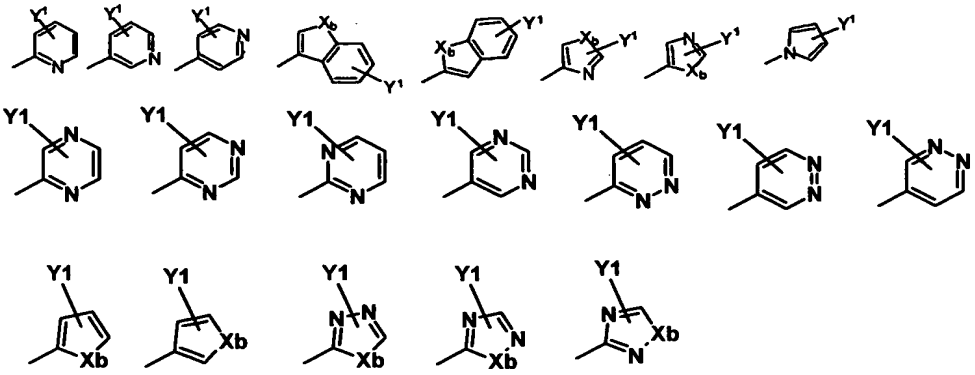
(contains from 1 to 4 hetero atoms of 1 or more species selected from the group consisting of nitrogen atom, oxygen atom and sulfur atom).

7. The compound, a salt thereof, or a solvate thereof described in claim 6, wherein R^2 is a group represented by the following formula;

[Formula 76]



[Formula 77]

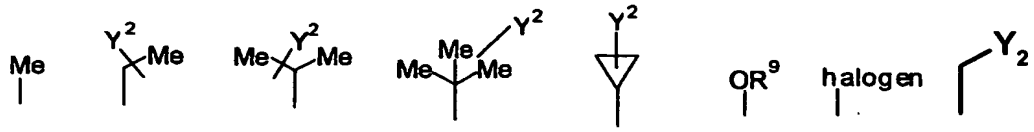


(in the formula, Xb means oxygen atom, sulfur atom, a substituent or NR^8, wherein R^8 means hydrogen atom, an alkyl group having from 1 to 6 carbon atoms or a halogenoalkyl group having from 1 to 6 carbon atoms, and the substituent Y^1 has the same meaning as described in the aforementioned [substituent group 2-2]).

8. The compound, a salt thereof, or a solvate thereof described in claim 7, wherein R^3 is a halogen atom, amino group, hydroxy group, mercapto group, an alkyl group having from 1 to 4 carbon atoms which may have a substituent, an alkoxy group having from 1 to 6 carbon atoms which may have a substituent, an alkylthio group having from 1 to 6 carbon atoms, an acyl group having from 2 to 5 carbon atoms or an alkoxycarbonyl group having from 2 to 5 carbon atoms; wherein the amino group among them may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 1 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, a heteroaryl group having from 3 to 10 carbon atoms, an acyl group having from 2 to 5 carbon atoms and an alkoxycarbonyl group having from 2 to 5 carbon atoms, and when said amino group has 2 substituents, they may be bonded together to form a cyclic structure.

9. The compound, a salt thereof, or a solvate thereof described in claim 7, wherein R^3 is a group represented by the following formula;

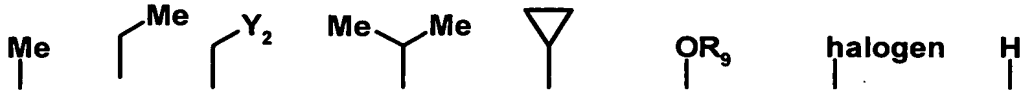
[Formula 78]



(in the formula, R^9 means hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 7 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms or an aromatic heterocyclic group, and the substituent Y^2 means amino group, hydroxy group, mercapto group, a halogen atom, an alkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an acyl group having from 2 to 5 carbon atoms or an alkoxycarbonyl group having from 2 to 5 carbon atoms, wherein the amino group among them may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 1 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aromatic heterocyclic group, an acyl group having from 2 to 5 carbon atoms and an alkoxycarbonyl group having from 2 to 5 carbon atoms, and when said amino group has 2 substituents, they may be bonded together to form a cyclic structure).

10. The compound, a salt thereof, or a solvate thereof described in claim 7, wherein R^3 is a group represented by the following formula;

[Formula 79]



(in the formula, R^9 means hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 7 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aralkyl group having from 7 to 12 carbon atoms or an aromatic heterocyclic group, and the substituent Y^2 means amino group, hydroxy group, mercapto group, a halogen atom, an alkoxy group having from 1 to 6 carbon atoms, an alkylthio group having from 1 to 6 carbon atoms, an

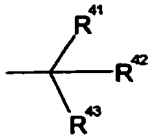
acyl group having from 2 to 5 carbon atoms or an alkoxycarbonyl group having from 2 to 5 carbon atoms, wherein the amino group among them may have 1 or 2 groups, as the substituent, selected from the group consisting of formyl group, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 1 to 6 carbon atoms, an aryl group having from 6 to 10 carbon atoms, an aromatic heterocyclic group, an acyl group having from 2 to 5 carbon atoms and an alkoxycarbonyl group having from 2 to 5 carbon atoms, and when said amino group has 2 substituents, they may be bonded together to form a cyclic structure).

11. The compound, a salt thereof, or a solvate thereof described in claim 9 or 10, wherein Y^2 is a halogen atom, alkoxy group having from 1 to 6 carbon atoms, hydroxy group or amino group, and R^9 is hydrogen atom, an alkyl group having from 1 to 6 carbon atoms, a cycloalkyl group having from 3 to 7 carbon atoms, an aryl group having from 6 to 10 carbon atoms or an aralkyl group having from 7 to 12 carbon atoms.

12. The compound described in claim 9 or 10, wherein Y^2 is fluorine atom, chlorine atom, methoxy group or hydroxy group, and R^9 is hydrogen atom, methyl group, ethyl group or isopropyl group.

13. The compound, a salt thereof, or a solvate thereof described in any one of claims 1 to 12, wherein R^4 is an alkyl group having from 1 to 4 carbon atoms which may have a substituent, or a compound represented by the following formula;

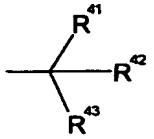
[Formula 80]



(R^{41}, R^{42} and R^{43} are as defined in the foregoing).

14. The compound, a salt thereof, or a solvate thereof described in any one of claims 1 to 12, wherein R^4 is a substituent having a structure represented by the following formula;

[Formula 81]



(R^{41}, R^{42} and R^{43} are as defined in the foregoing).

15. A compound, a salt thereof, or a solvate thereof, which is a compound represented by the formula (I) having a combination in which

R^2 is an aryl group;

R^1 is a cyclic substituent having a saturated or partially saturated substituent;

R^3 is an alkyl group having from 1 to 3 carbon atoms;

R^4 is a substituent selected from the group consisting of (1) an alkyl or alkylene group having from 2 to 5 carbon atoms which may take a branched chain form, (2) a cyclic alkyl group having 3 or 4 carbon atoms, (3) an alkyl group having from 2 to 5 carbon atoms having fluorine atom or chlorine atom, which may take a branched chain form, (4) an alkoxyalkyl group having from 2 to 5 carbon atoms, and (6) a substituted benzyloxyethyl group which may have 1 or 2 methyl groups on the ethyl group.

16. A compound, a salt thereof, or a solvate thereof, which is a compound represented by the formula (I) having a combination in which

R^2 is an aryl group;

R^1 is a saturated or partially saturated nitrogen-containing heterocyclic group substituted with amino group, an alkylamino group or a dialkylamino group;

R^3 is an alkyl group having from 1 to 3 carbon atoms;

R^4 is a substituent selected from the group consisting of (1) an alkyl or alkylene group having from 2 to 5 carbon atoms which may take a branched chain form, (2) a cyclic alkyl group having 3 or 4 carbon atoms, (3) an alkyl group having from 2 to 5 carbon atoms having fluorine atom or chlorine atom, which may take a branched chain form, (4) an alkoxyalkyl group having from 2 to 5 carbon atoms, and (6) a substituted benzyloxyethyl group which may have 1 or 2 methyl groups on the ethyl group.

17. A compound, a salt thereof, or a solvate thereof, which is a compound represented by the formula (I) having a combination in which

R^2 is phenyl group;

R^1 is pyrrolidinyl group substituted with amino group, an alkylamino group or a dialkylamino group;

R^3 is methyl group;

R^4 is a substituent selected from the group consisting of ethyl group, isopropyl group, normal butyl group, tertiary butyl group, cyclopropyl group, propylen-2-yl group, methoxymethyl group, fluoromethyl group, 2-chloroethyl group, 2-hydroxyethyl group, 1,1-dimethyl-2-hydroxyethyl group, 2-benzyloxyethyl group, 2-benzyloxy-1,1-dimethyl-ethyl group and 2-(4-fluorophenylmethyl)oxyethyl group.

18. A compound, a salt thereof or a solvate thereof, which is a compound represented by the formula (I) having a combination in which

R^2 is phenyl group;

R^1 is pyrrolidinyl group substituted with amino group, methylamino group or dimethylamino group;

R^3 is methyl group;

R^4 is a substituent selected from the class consisting of ethyl group, isopropyl group, normal butyl group, tertiary butyl group, cyclopropyl group, propylen-2-yl group, methoxymethyl group, fluoromethyl group, 2-chloroethyl group, 2-hydroxyethyl group, 1,1-dimethyl-2-hydroxyethyl group, 2-benzyloxyethyl group, 2-benzyloxy-1,1-dimethyl-ethyl group and 2-(4-fluorophenylmethyl)oxyethyl group.

19. A medicine which comprises the compound, a salt thereof, or a solvate thereof described in any one of claims 1 to 18.

20. An infection treating agent which comprises the compound, a salt thereof, or a solvate thereof described in any one of claims 1 to 18.

21. An antifungal agent which comprises the compound, a salt thereof, or a solvate thereof described in any one of claims 1 to 18.

22. A method for treating an infection, which uses the compound, a salt thereof, or a solvate thereof described in any one of claims 1 to 18.

23. Use of the compound, a salt thereof or a solvate thereof described in any one of claims 1 to 18 for infection treatment.